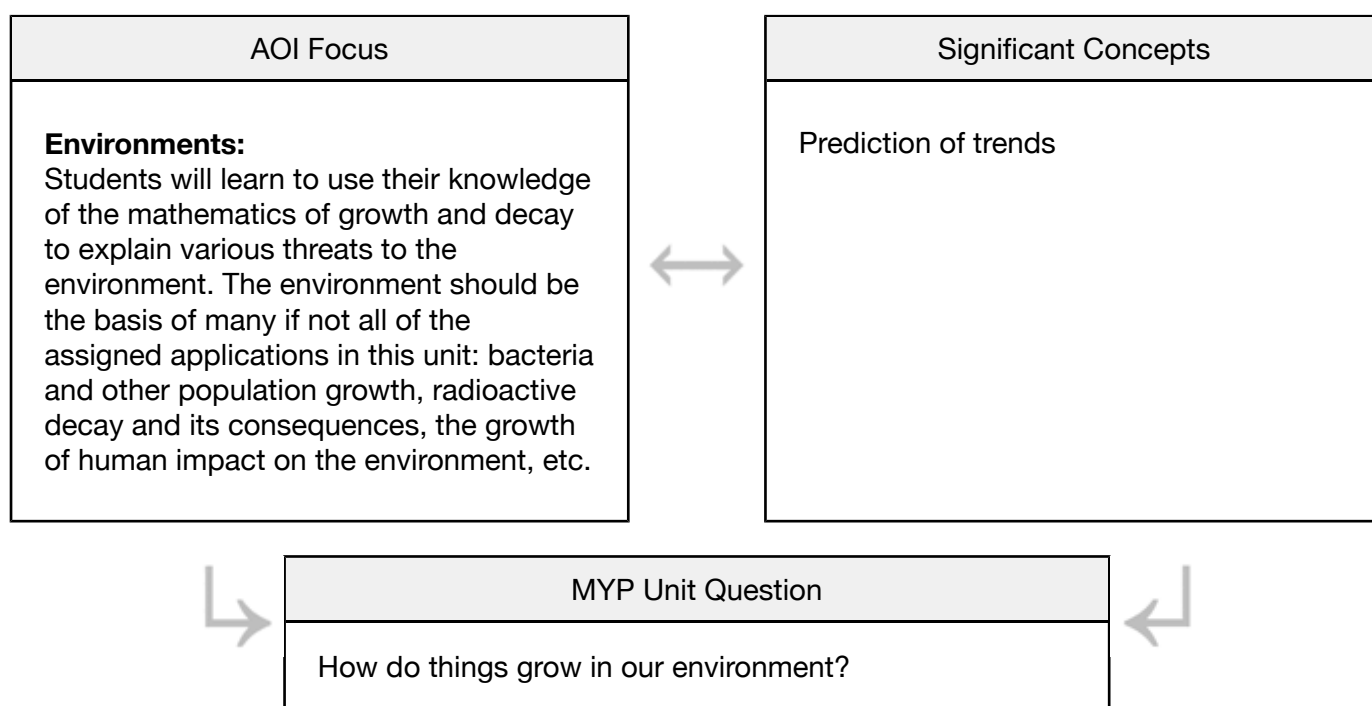


MYP Unit Planner

Unit Title	Growing Things (AP / GP, Exponential, Logarithm, Lines of Best Fit)
Teacher(s)	Jake Eagle, Echo Yuet Mei Li, Daniel Slosberg
Subject and Grade Level	Extended mathematics Grade 10 — Year 10
Time frame and Duration	4 Weeks

Stage 1: Integrate significant concept, area of interaction and unit question, and ensure it can be assessed



Assessment

<p>What task(s) will allow students the opportunity to respond to the unit question?</p> <p>What will constitute acceptable evidence or understanding? How will students show what they have understood?</p>
<p>Students are able to identify and describe a sequence existing in real life. They can apply their knowledge, including their understanding on operation of indices and logs, graphical representation of Exp and Log Function, and the conversion between Exp, Log and Linear function.</p>
<p>Which specific MYP objectives will be addressed during this unit?</p>
<p>A: Knowledge and understanding</p> <ul style="list-style-type: none"> • use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations, including those in real-life contexts • select and apply general rules correctly to solve problems, including those in real-life contexts. • know and demonstrate understanding of the concepts from the five branches of mathematics (number, algebra, geometry and trigonometry, statistics and probability, and discrete mathematics). <p>C: Communication in mathematics</p> <ul style="list-style-type: none"> • use appropriate mathematical language (notation, symbols, terminology) in both oral and written explanations

- use different forms of mathematical representation (formulae, diagrams, tables, charts, graphs and models)
- communicate a complete and coherent mathematical line of reasoning using different forms of representation when investigating complex problems.

D: Reflection in mathematics

- explain whether their results make sense in the context of the problem.
- explain the importance of their findings.
- justify the degree of accuracy of their results where appropriate.
- suggest improvements to the method when necessary.

Which MYP assessment criteria will be used?

A: Knowledge and understanding

C: Communication in mathematics

D: Reflection in mathematics

Stage 2: Backward planning: from the assessment to the learning activities through inquiry

Content

What knowledge and/or skills (from my course overview) are going to be used to enable the student to respond to the guiding question?

What (if any) Standard/skills are to be addressed?

Knowledge & Skills:

- Reflection Skills: Explain the reasonableness of the answers obtained and find the most reasonable result.
- Problem Solving & Thinking Skills: Independently construct a number of plans to tackle a problem, and identify the most suitable plan.

Approaches to Learning

How will this unit contribute to the overall development of subject-specific and general ATL skills?

• **Reflection:**

self-awareness: including seeking out positive criticism, reflecting on areas of perceived limitation

• **Thinking:**

Applying knowledge and concepts — including logical progression of arguments

Identifying problems — including deductive reasoning, evaluating solutions to problems

Creating novel solutions — including the combination of critical and creative strategies, considering a problem from multiple perspectives

Extra practice worksheets are given to students for consolidation of drilling skills.

The idea of Exp and Log functions are introduced with various examples from our day to day life.

Students are expected to search more information in Internet. Every subtopic has great possibility of forming conjectures.

Learner Profile

Which characteristics of the learner profile will be emphasized? How will you make students aware of them?

- Knowledgeable: Understanding important local issues.
- Communicators: Using mathematical language and symbols to explain limited resources.

International Mindedness

How will international-mindedness be addressed?
Students understand various threats to the environment on earth and take suitable responses in daily life.

Learning Experiences

Teaching strategies

How will students know what is expected of them? Will they see examples, rubrics, templates, etc.?	How will we use formative assessments to give students feedback during the unit?
<p>The pedagogy used emphasizes a lot on both teaching and learning. Up to 30% of class time is for self/peer-exploring and practicing. Teacher guidance, of course, is available when needed. Student are given opportunities to think and ask constructive questions. Equal emphasis have been given on both graph plotting manually and use of GDC.</p> <p>In class, we explained the guiding questions and criteria assessed in detail. We also create an practise assessment that highlighted the objectives of the topic and at the same time the criteria assessed.</p>	<p>We will use a couple of formative assessments:</p> <p>Greenhouse Gasses Students are asked to model the accumulation of carbon dioxide in the atmosphere and relate it to their health.</p> <p>Epidemics Students model the growth rates of bacteria in the environment and antibiotics in factories to understand how epidemics may spread.</p>
How will students acquire the knowledge and practice the skills required? How will they practice applying these?	What different teaching methodologies will be employed?
<p>Students will know more about various examples from everyday life where things change by a fixed amount or fixed rate. This topic will encourage them to look for links between academic knowledge and its applications in daily life. We are showing students the importance of school learning and would like them developing into a knowledgeable person.</p> <p>Furthermore, students will learn how to come up with the equation, and will explore various approaches to verify their results.</p>	<p>Extra practice worksheets are given to students for consolidation of drilling skills.</p> <p>Various kinds of IT tools will be used:</p> <ul style="list-style-type: none"> • Use of spreadsheets to generate terms of a sequence • Using the LIST function of a GDC • Curve-fitting on GDC • Curve-fitting with Geogebra • Internet research
Do the students have enough prior knowledge?	How are we differentiating teaching and learning for all? Have we considered those learning in the language other than their mother tongue? Have we considered those with special educational needs?
Students should be able to use the rules of indices and Equation of Straight Lines that covered in Y9 comfortably, we will know when they apply their	Students with special learning needs will be on the list of ILN department in the beginning of the term; besides, Maths Help session will run during different time slots during the week.

understanding on the practice exercise , they should be able to derive and justify their findings.	
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Resources

What resources are available to us?

How will our classroom environment, local environment and/or the community be used to facilitate students' experience during the unit?

Journal:

Variuos website

MYP YEAR - 5 (New Trend Text Book)

Maths Studies Textbook

IBDP Maths Formula Book

Ongoing reflections and evaluations

In keeping an ongoing record, consider the following questions. There are further stimulus questions in the unit planning section of MYP: from principles into practice.

Students And Teachers

- What did we find compelling? Were our disciplinary knowledge/skills challenged in any way?
- What inquiries arose during the learning? What, if any, extension activities arose?
- How did we reflect—both on the unit and on our own learning?
- Which attributes of the learner profile were encouraged through this unit? What opportunities were there for student-initiated action?

Possible Connections

- How successful was the collaboration with other teachers within my subject group and from other subject groups?
- What interdisciplinary understandings were or could be forged through collaboration with other subjects?

Assessment

- Were students able to demonstrate their learning?
- How did the assessment tasks allow students to demonstrate the learning objectives identified for this unit?
- How did I make sure students were invited to achieve at all levels of the criteria descriptors?
- Are we prepared for the next stage?

Data Collection

- How did we decide on the data to collect? Was it useful?